Memorandum

ERM-North Central, Inc.

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To: Michael McAteer, U.S. Environmental Protection Agency

cc: Tony Likens, IDEM
Thomas Krueger, USEPA
Frank Mahuta, CH2M-Hill

From: Roy Ball, Ph.D., P.E.

Date: April 12, 1996

Subject: Environmental Conservation and Chemical Superfund Site

ERM.

This Technical Memorandum presents the rationale for modification of the Acceptable Subsurface Water Concentration on Table 3-1 of Exhibit A to the Environmental Conservation and Chemical (ECC) Superfund Site Consent Decree[1] (Exhibit A) and the application of that rationale to beryllium.

According to the original Exhibit A, the Acceptable Subsurface Water Concentrations are based on either drinking water standards or criteria (MCL, proposed maximum contaminant level goal [MCLGP], or lifetime drinking water health advisory [LDWHA]) or the appropriate risk-based concentration[2]. An MCL for beryllium had not been published at the time of the drafting of the original Exhibit A. The risk-based concentration equations contained in Exhibit A for subsurface water were based on subsurface water ingestion only. The risk-based concentrations for beryllium in the Exhibit A is 175 ug/l based on noncarcinogenic effects. Carcinogenic potency factors for beryllium did not exist at the time of the drafting of the original Exhibit A.

The priority for listing of the Acceptable Subsurface Water Concentrations was as follows: MCL, proposed MCL Goal, Lifetime Drinking Water Health Advisory, and risk-based concentration. For example, those organic compounds where the drinking water standards or criteria are the basis for the Acceptable Subsurface Water Concentration (i.e., chloroform; 1,1-dichloroethene; and trichloroethene) have lower risk-based concentrations than their respective MCL but the MCL is the basis for the Acceptable Subsurface Concentration. Therefore, the MCL is the appropriate value for the Acceptable Subsurface Water Concentration for beryllium because: (1) the MCL is a drinking water standard that is

1 Consent Decree in Civil Action No. 83-1419C, United States of America. State of Indiana vs. Environmental Conservation and Chemical Corporation, et al.

2 Consent Decree, page 22.

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protective of human health[3] and (2) the use of the MCL is consistent with the procedures originally used to develop Exhibit A.

The current MCL for beryllium is 4 ug/L[4].

If you have any questions, please do not hesitate to call.

3 According to the IRIS printout for beryllium dated April 10, 1996, the current carcinogenic slope factors are based on an *inhalation* study. Oral slope factors have not been reliably determined but are only assumed to be equal to the inhalation factors.

4 40 CFR 141.62.